

ACC in Power Plants

ARPA-E Meeting

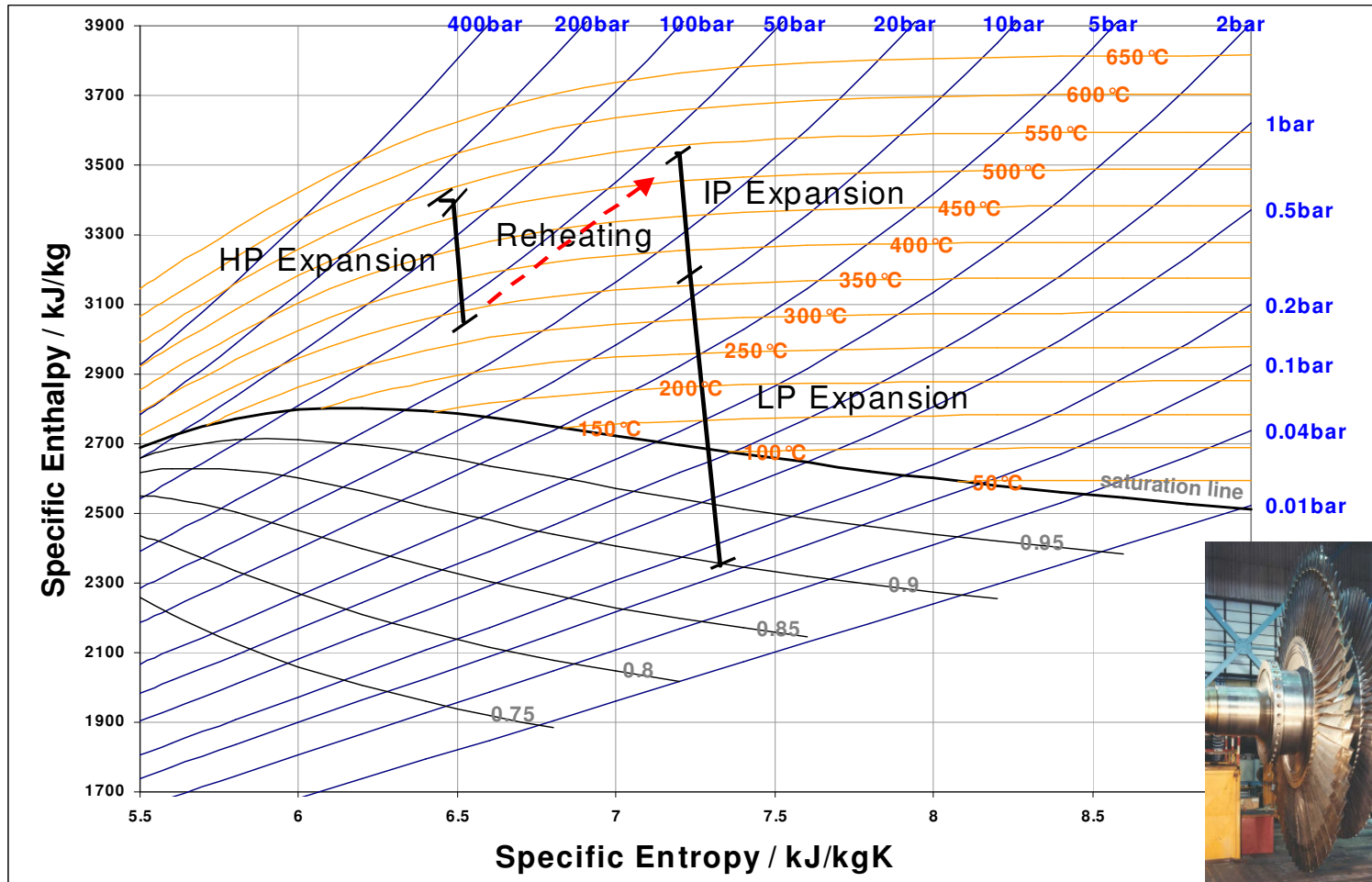
Dr O. Le Galudec

Washington DC, 28th March 2012

POWER

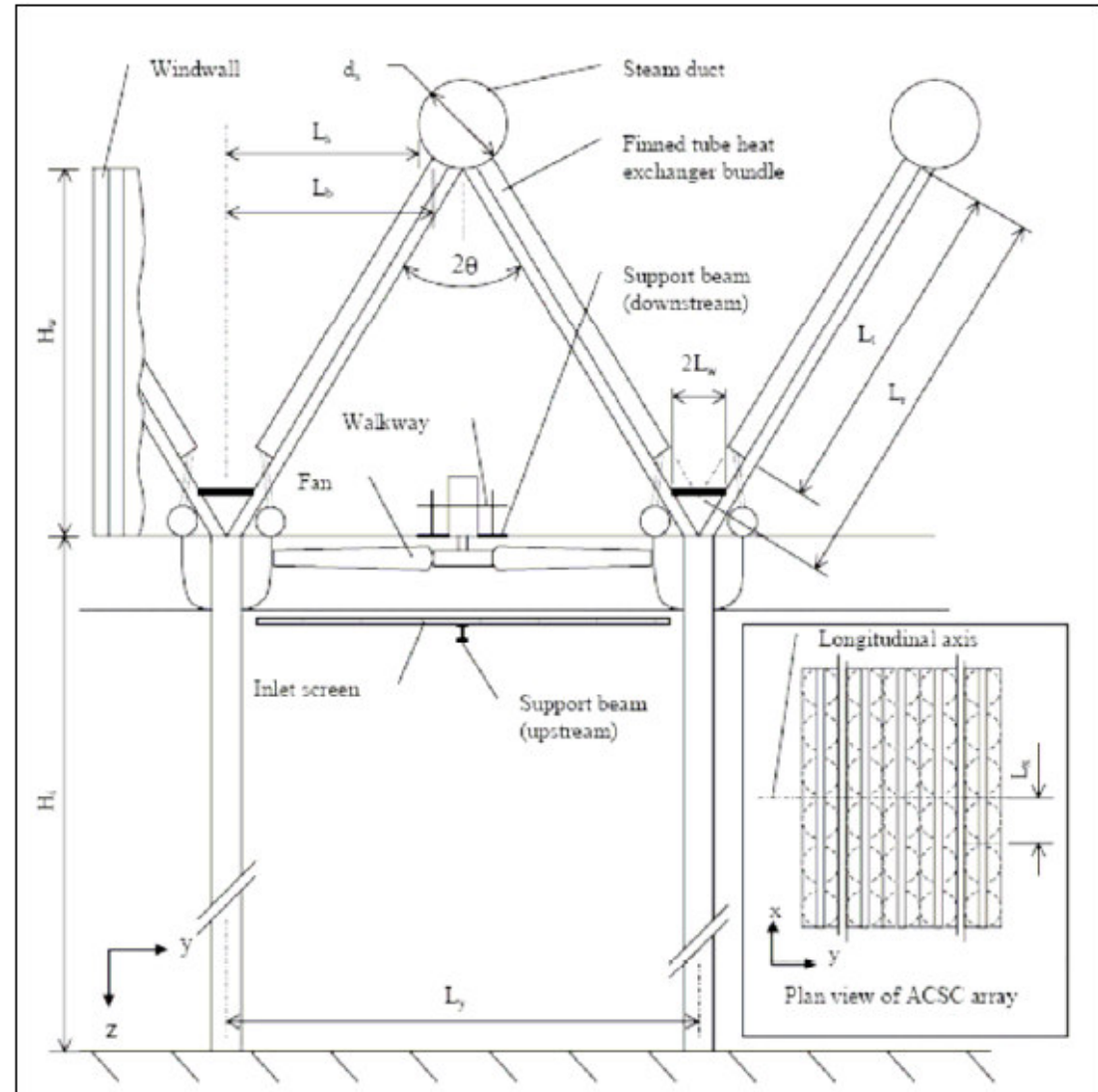
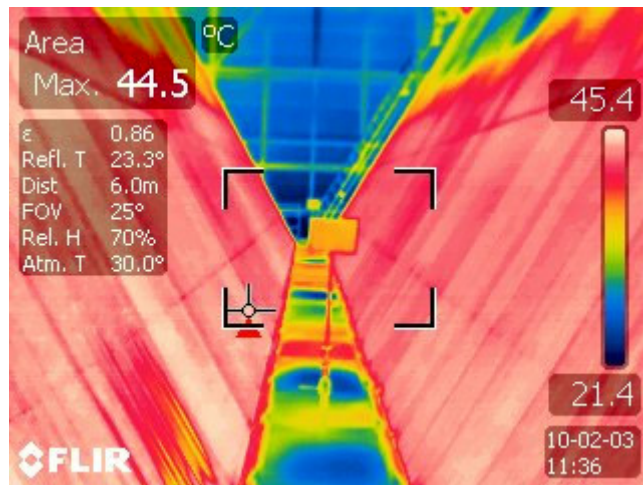
ALSTOM

A Steam Turbine Expansion line



Cooling is needed at the end of the expansion line.

Air Cooled Condenser is available Technology **ALSTOM**



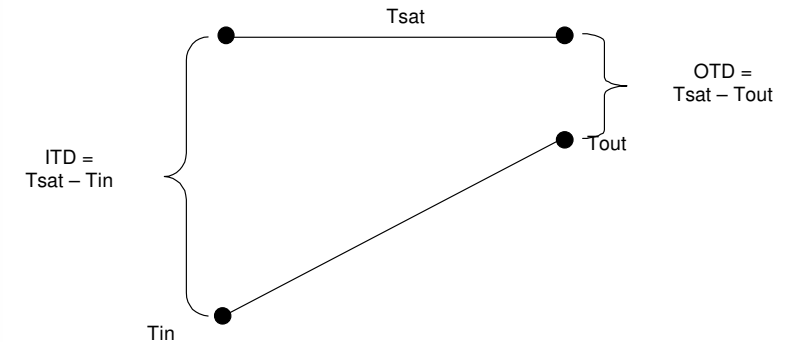
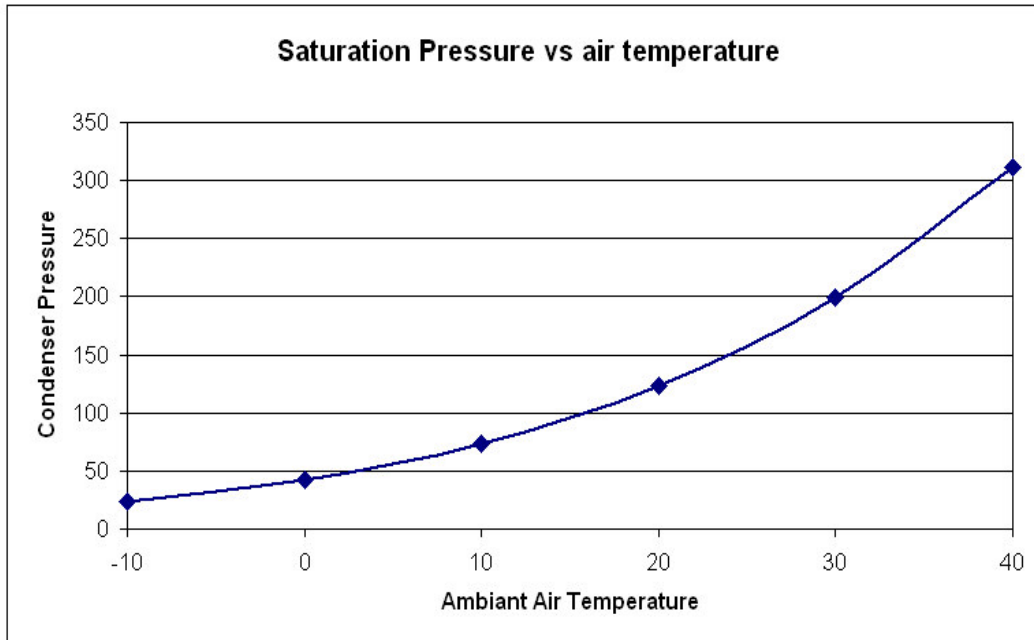
ACC key features



- No Water Consumption
- No visible plume
- No icing risk in vicinity
- High availability
- Proven Technology
- Test covered by Codes & Standards
- Performances Impacted by air temperature and wind



ACC : straight from W/S properties



Air Temperature	°C	-10	0	10	20	30	40
Air temp. + 30°C	°C	20	30	40	50	60	70
Saturation P	mbar	23	42	74	124	199	312
Specific Volume	m3/kg	57,8	32,9	19,5	12,0	7,7	5,0

- Aluar 1 & 2 Combined Cycle – Argentina
- Hays 3 & 4 Combined Cycle – Texas / USA
- Gend Ringvart Combined Cycle – Belgium
- Baudour Combined Cycle – Belgium
- Esch sur Alzette Combined Cycle – Luxembourg
- Gissi 1 & 2 Combined Cycle – Italy
- Langage Combined Cycle – UK
- Shotton CHP Combined Cycle – UK
- Medupi 1-6 Steam tails – South Africa
- Kusile 1-6 Steam tails – South Africa
- San Reus Combined Cycle - Spain

ACCs are not uncommon.

*Even in places where water is
available.*

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